ants. During the progress of the war the institute has been in constant communication with the War Office and other Government Departments, and has been largely instrumental in mobilising the chemists of the country both for technical service with the forces and for the production of all kinds of war material.

The authorities having at last become aware that the services and advice of the scientific chemist are indispensable in the economy of the State, it appears eminently desirable that some representative body should be recognised as the mouthpiece of the several specialised organisations which have been one after another called into existence. The Institute of Chemistry already mentioned is a professional body with aims in reference to chemistry corresponding with those of the College of Physicians in relation to medicine. But the Chemical Society is much older, having been founded in 1841, and is, in fact, the parent of all the chemical associations now existing. It is composed of about 3400 fellows, and its object is the cultivation of the science of chemistry and the publication of the results of research. The Society of Chemical Industry, founded about the year 1880, is also a very numerous and influential body, consisting of manufacturers and others engaged in the application of chemistry to practical purposes. Beside these two large societies there are the more recently founded Society of Public Analysts, the Association of Chemical Manufacturers, the Faraday Society, the Biochemical Society, the Ceramic Society, the Society of Dyers and Colourists, the Institute of Brewing, and some others less purely chemical in character.

A short time ago the Institute of Chemistry addressed representations to the Government pointing out the necessity for introducing a definite system into the conditions of appointment of chemists directly engaged in the service of the State. There are already three first-class appointments held by officials entitled respectively the "Government Chemist," "War Department Chemist," and "Admiralty Chemist," but the subordinate offices are without a recognised system as to rank, qualifications, or emoluments.

There is, however, another question of some practical importance. In the event of the Government requiring information, advice, or opinion on any chemical question, to which of the bodies mentioned should inquiry be addressed? Hitherto the Government has been much in the habit of seeking advice on all kinds of subjects from the Royal Society, and getting it for nothing. During the war the Institute of Chemistry has given valuable information and assistance. But neither of these bodies can speak for British chemistry as a whole, and, since it is obviously undesirable for any divergence of opinion to show itself in connection with matters in which the public advantage or even safety is concerned, a new body has recently been called into existence consisting of duly appointed representatives of all the chemical societies and associations. It is hoped that this Federal Council for Pure and Applied Chemistry (the establishment of which was referred to in Nature for February 27 last, vol. cii., p. 591) will be recognised by the Government as qualified to speak for the whole of the chemists of this country; at the same time, its existence will promote the general recognition of the profession of chemistry and of its right to a position corresponding with that of the other learned professions.

NOTES.

The eighty-seventh annual meeting of the British Association will be held in Bournemouth from Tuesday, September 9, to Saturday, September 13, under the presidency of the Hon. Sir Charles Parsons, who will deliver an address to the association (dealing with engineering and the war) at the inaugural general meeting in the Winter Gardens on September 9 at 8.30 p.m. The sectional work will begin on Tuesday morning, and the days available for sectional meetings will therefore be Tuesday, Wednesday, Thursday, and Friday, September 9, 10, 11, and 12, and, if required, Saturday morning, September 13. The following presidents of sections have been appointed by the council:—A, Mathematical and Physical Science, Prof. Andrew Gray; B, Chemistry, Prof. P. Phillips Bedson; C, Geology, Dr. J. W. Evans; D, Zoology, Dr. F. A. Dixey; E, Geography, Prof. L. W. Lyde; F, Economic Science and Statistics, Sir Hugh Bell, Bart.; G, Engineering, Prof. J. E. Petavel; H, Anthropology, Prof. Arthur Keith; I, Physiology, Prof. D. Noel Paton; K, Botany, Sir Daniel Morris; L, Educational Science, Sir Napier Shaw; and M, Agriculture, Prof. W. Somerville. Evening discourses will be delivered on Thursday, September 11, by Sir Arthur Evans on "The Palace of Minos and the Prehistoric Civilisation of Crete"; and on Friday, September 12, by Mr. Sidney G. Brown on "The Gyroscopic Compass."

A meeting of subscribers to the Ramsay Memorial Fund will be held on Thursday, June 5, at 5 p.m., at University College, London, for the purpose of considering plans to be submitted by the executive committee with respect to the progress of the fund and to the objects to which the fund should be devoted. The total amount already given or promised amounts to 42,794*l*. 10*s*. 9*d*. This sum includes the following contributions, either in full payment or on account of the collections by the following overseas committees:—Switzerland, 817*l*. 6*s*. 9*d*.; United States of America, 626*l*. 15*s*. 10*d*.; Japan, 500*l*. 9*s*. 2*d*.; India, 397*l*. 8*s*. 4*d*.; Italy, 395*l*. 16*s*. 8*d*.; Denmark, 225*l*.; Norway, 186*l*. 6*s*. 7*d*.; Chile, 128*l*. 6*s*. 8*d*.; Holland, 68*l*. 1*s*. 7*d*.; Australia, 37*l*. 16*s*.; New Zealand, 21*l*. 3*s*. 6*d*. It also includes 5177*l*. 18*s*. 6*d*. collected by the Glasgow committee for a Glasgow fellowship. Promises, either provisional or definite, for the foundation of one, or more than one, Ramsay Memorial Fellowship have been received from the Governments of Italy, Japan, Spain, Norway, China, and Greece, and other Governments have the matter under favourable consideration.

Under the auspices of the French Government the Office Commercial Français en Angleterre has organised in London an exhibition of optical instruments and perfumery. The Office Commercial is a recently created department of the French Ministry of Commerce, and its object is to assist manufacturers to develop export trade The exhibition is being held at 153 Queen Victoria Street, and will be open until June 5. The optical exhibits include field- and opera-glasses, telescopes, kinematographs, surgical mirrors, laryngoscopes, spectacles, etc. So much advance has been made in this industry by British manufacturers during the war, and so little is known of it on the Continent, that we hope something will be done to hold in Paris and elsewhere an exhibition of optical and other manufactures in which we have achieved decided progress. Perhaps arrangements can be made to transfer to some Continental cities the main part of the British Scientific Products Exhibition to be held at the Central Hall, Westminster, during July.

IN view of the present industrial unrest and the difficult social problems with which the country will be faced during the next few years, the promotion of better relations between employers and employees demands scientific study. The National Alliance of Employers and Employed, through its organ *Unity*, is adopting the enterprising step of offering a series of prizes presented by Sir Robert Hadfield, and amounting in all to 200*l*., for the best essay on either of the following subjects:—"A Practical Scheme for the Joint Development of Industry by Capital and Labour," "The Most Effective Means for the Prevention of Unemployment," and "The Most Effective Means for the Prevention of Industrial Disputes." The committee of award will consist of the Right Hon. Fredk. Huth Jackson (chairman of the National Alliance), the Master of Balliol College, Oxford, and the Right Hon. Arthur Henderson. Essays must not exceed 3000 words in length, and must be addressed to the Editor, *Unity*, 64 Victoria Street, London, S.W.1, marked "Essay Competition." The competition closes on August 30, and the rights of publication of essays submitted are to be vested in *Unity*.

THE difficulties experienced by many university graduates in obtaining employment suitable to their education and abilities received careful consideration at a recent meeting of representatives of the universities, the Imperial College of Technology, and the Federation of British Industries, under the chairmanship of Sir Richard Vassar-Smith. The proposal to set up an organisation which might act as a "clearing-house" between the universities and the industries of the country was received so favourably that it was decided to hold a further meeting to consider the practical details of the scheme. An efficient organisation of the nature suggested should ensure that all grades of university students would have the opportunity of passing into that type of productive employment in which they would be able to use their abilities to the fullest extent. It would also make for that closer co-operation between the university and industry which is so essential for national prosperity in the years to come. The marked tendency for the university graduate to proceed overseas would undoubtedly be checked by the offer of suitable employment in this country, and the setting up of such an organisation will meet with the approval of all interested in national well-being. The carrying out of the scheme at an early date would exert a considerable influence on the maintenance of that steady flow of workers through the university to commerce and labour which is looked forward to on all sides.

A PETITION in opposition to the Dogs Protection Bill, with more than eight hundred signatures, chiefly of residents in Leeds and other cities in Yorkshire, has been collected by a few private individuals in ten days, and has been forwarded to the Home Secretary. It was pointed out that, in the opinion of the petitioners, the Bill would do harm by interfering with the progress of medical research. The list of signatures included the heads of many of the departments of science, technology, and medicine in the University of Leeds, as well as many important members of the administrative staff of the University. There were also names of many members of the infirmary staff, important civic persons, and representatives of the clerical, legal, dental, nursing, and other professions. The Bill was amended in the House of Commons during the report stage on May 23 by the insertion of a provision, moved on behalf of the Government, permitting experiments where the object in view would be frustrated unless it was performed on a dog. The amendment was carried by a majority of 78, and the Bill now awaits a third reading.

THE Society for the Prevention of Hydrophobia (founded in 1886) is being reorganised for the purpose of influencing public opinion and urging the Government to adopt universal muzzling for eight months, accompanied by six months' quarantine on all imported dogs, which past experience has shown to be the quickest, safest, and only means of completely eradicating rabies and hydrophobia. It is the stray, wandering, and uncared-for dogs, which infest every town and village, that are the most likely to be bitten by a rabid dog escaped from an infected area and to spread the disease farther afield. Universal muzzling would lead to the seizing and elimination of all stray dogs before a rabid dog arrived in the district. To wait until a rabid dog *has arrived* in a district and infected one or more of these strays is a fatal mistake. A forty-mile radius is all very well for cattle disease and swine fever, but not for rabies. Amongst those who have lately joined the committee are Sir John McFadyean, principal of the Royal Veterinary College; Dr. C. J. Martin, director of the Lister Institute; Mr. Stephen Paget, and Major Penberthy, president of the Royal College of Veterinary Surgeons (1897). Mr. J. Sidney Turner has been elected chairman. Vice-presidents will include Surg.-Gen. Sir David Bruce, Sir J. Rose Bradford, the Earl of Chesterfield, Sir Watson Cheyne, Bart., Earl Curzon of Kedleston, Major David Davies, the Duchess of Newcastle, Lord Bledisloe, Mr. Leslie Scott, K.C., and the Hon. A. H. Holland-Hibbert.

AN outline of the progress in practical radiotelegraphy during the past four years was given last week by Mr. Godfrey Isaacs in an address before the members of the Aldwych Club. The range of maritime communication, which before the war averaged 200 miles by day and 500 miles at night, had been quadrupled. "Jamming," apparently, has been eliminated, and Mr. Isaacs said ships would in future be able to telephone and telegraph either to ships at sea or to the coast without any possibility of interference. The wireless "direction-finder" would enable the pilot of an aeroplane or airship to ascertain approximately where he was at any time. A further development had produced a new transmitter, which would project into the air a wide, divergent beam, something like a searchlight without the light, which would extend over any area required, or, if it was desired, a concentrated beam over some small place, and these beams would convey to the men in the sky automatically the name of the place they were passing over. Similarly, these beams could be equipped to lightships or buoys in fixed and defined positions, so that even when passing over the sea an airman would know exactly where he was. With regard to land communications, very little was done before the war, particularly in well-populated countries, such as those in Europe, in connection with wireless telegraphy, for the reason that if they had

had a number of wireless telegraphy stations in close proximity, interference with each other would have made an efficient service quite impossible. That was a thing of the past. There was no reason why there should not be wireless telegraph and wireless telephone services between all the principal centres throughout this country. London could talk to Manchester or Edinburgh or Dublin without any possible danger of interfering with any other station, and those messages could not be overheard by any other station. In telegraphing and telephoning, the same thing exactly applied. Mr. Isaacs regarded that as an epoch-making invention. He thought a very great service would be done if wireless telegraph and wireless telephone services were constructed as auxiliaries to land-lines. Wireless to-day could do 150 words per minute simplex and 300 words a minute duplex. It would require but a very small mechanical improvement to double and quadruple that number of words transmitted by wireless. Mr. Isaacs was quite satisfied that, so soon as wireless traffic needed the greater speed of transmission, mechanical improvement would be introduced, and they would get something in the neighbourhood of 600 words per minute.

MR. VAUGHAN NASH and Sir T. H. Middleton have been appointed Commissioners under the Development and Road Improvement Funds Acts.

SIR ALBERT STANLEY has, on account of ill-health, tendered his resignation as President of the Board of Trade, and Sir Auckland Geddes has been appointed as his successor.

THE appointment of the Ray Lankester investigator having been suspended during the war, the following have now been appointed, beginning or expected to begin work at the Plymouth Marine Biological Laboratory on the dates named:—Mr. L. R. Crawshay, March 1 (Porifera); Mr. H. M. Fox, June 21 (marine insects); Mrs. Redman King, July 3 (Echinus); and Prof. W. Garstang (Ascidians).

THE Ipswich Field Club has lately investigated two of the tumuli on Martlesham Heath, Suffolk, and proved them to belong to the Bronze age. Mr. J. Reid Moir, who superintended the work, gave an account of the results to a meeting held on the spot on May 17. He showed the remains of a very thin bronze bowl, which seemed to be partly covered with a material like linen in a good state of preservation. It contained incinerated human bones, part of a bone comb, a bead, and other fragments apparently of ornament. Traces of hearths were distinct in the larger mound examined.

THE Board of Agriculture and the Road Board have appointed a joint sub-committee to arrange for experiments to be carried out to ascertain whether there is any foundation for the allegation that tar-treated roads are a source of danger to fisheries; if so, to what extent; and what measures can be taken to minimise or obviate the possible danger. The sub-committee consists of:—Dr. Jee, Chemical Adviser to the Board of Agriculture; Dr. Hammond Smith, Scientific Adviser to the Salmon and Trout Association; Mr. W. J. A. Butterfield, Consulting Analytical Chemist to the Road Board; and Mr. W. J. Taylor, County Surveyor of Hampshire.

IN a recent issue of the *Fishing Gazette* (April 5) Mr. W. J. A. Butterfield discusses the question of the poisoning of fish by road-washings. As regards tarred roads, it is noted that the constituents of coal-tar most directly injurious to fish are the phenols. These may be present to the extent of 3 per cent. in tar for road use, though generally the proportion is much less. Water dissolves out a little of the phenols, and such contaminated water draining into rivers may, no doubt, under particular conditions, be deleterious to fish, although experiments have shown that, so long as the proportion of phenol is not more than 0.25 in 100,000, the water is perfectly safe. Considerable pollution is possible where the river runs through a valley and is crossed by the road, so that drainage from the inclines on either side flows into the river. The periods when a tarred road is likely to be most dangerous to fish life are (1) when the tarring is quite fresh and followed by heavy rainfall, which washes away some of the tar before it has set; and (2) when the coating of tar is broken up by wear-and-tear, so that rain can percolate freely through it. A tarred surface "scarified" preparatory to remaking may be very dangerous to fish, and care should be taken that the material removed is not left lying where rain-washings from it will enter fishing waters. Oil-droppings from motor traffic are, speaking broadly, unlikely to be directly mischievous, but indirectly they may be injurious through destruction of insect life, on which the fish depend for their food supply.

DR. GEORGE FERDINAND BECKER, who was on the staff of the United States Geological Survey since 1879, died on April 20 in Washington, at the age of seventy-two. His name will always be associated with the days when the survey, by the liberality and the wide distribution of its publications, began to make itself known throughout the scientific world. Becker's work was mostly devoted to the geology of important mineral deposits, and he showed again and again how mining development assisted in the understanding of the relations of rock-masses in the crust. His monograph on "The Geology of the Comstock Lode," published in 1882, directed attention, at a comparatively early date, to the importance of the study of thin rock-slices with the microscope, and its beautiful series of illustrations followed only three years after those issued by Fouqué and Lévy in their famous "Minéralogie micrographique." The width of range in Becker's work is further illustrated by his bulletin on "Schistosity and Slaty Cleavage" (1904), in which he urged that rock-cleavage is due to a weakening of cohesion, antecedent to rupture, on planes of maximum slide, supporting his thesis by experiments on natural clays.

BY the death of Mr. Richard H. Curtis on May 21 meteorology has lost one who took a keen interest in its various branches for more than half a century. Mr. Curtis entered the Meteorological Department of the Board of Trade under Admiral FitzRoy in 1861. For a long time he prepared for the Press the results of the work of observatories, and in 1907 he became superintendent of the instruments and observatories division of the Office. For many years Mr. Curtis lived at Warlingham, Surrey. He retired from the Meteorological Office in 1912 at the age of sixty-five, but continued to supply anemometric records to the Office and rainfall records to *Symons's Meteorological Magazine* until a few months ago. He was a fellow of the Royal Meteorological Society, and served on the council for several years. Mr. Curtis contributed many papers to the society's Journal on various subjects, and especially on sunshine and wind-force. He introduced an improvement in the mounting for the lens and bowl of the Campbell-Stokes sunshine recorder, and carried out interesting experiments on the distribution of wind-pressure upon flat surfaces. He also aided in working up the atmospheric effects of the Krakatoa eruption of August, 1883, the results of which were incorporated in the report by the Royal Society.

MR. E. TORDAY contributes to the April issue of *Man* an interesting account of the Northern Babunda tribe, an offshoot of the Kimbundu of Angola. They are a fine, tall, heavy-boned, short-legged, very dark skinned race, with pleasant features. With the exception of infants they are all clothed, not in Manchester goods, but in cloth home-made from the fibre of the raphia palm. All negroes are keen traders, and trade is the principal occupation of the men; but a great market is scarcely ever held which does not end in a fight between two hostile factions. The crops of the field belong to the woman who tilled it, and it is her duty to feed her husband and her children. Large numbers of slaves are kept, who may be freely sold, but the owners cannot put them to death. No persons who can trace a common ancestor are allowed to marry, and prenuptial infidelity is the normal rule. They are fond of music, and sing better than any other tribe on the Congo. A large collection of their musical instruments has been made for the British Museum.

THE attention of coleopterists may be directed to Dr. F. H. Gravely's "Contribution towards the Revision of the Passalidæ of the World" (Memoirs Indian Museum, vol. vii., No. 1, pp. 146+16 figs. + 1 plate, December, 1918), in which, in addition to the systematic part, the external morphology, classification, and geographical distribution of these beetles are discussed.

THE Commonwealth Bureau of Meteorology has published in one sheet a layer-coloured orographical map of Australia on an approximate scale of 4½ millions. The map has been compiled by Dr. Griffith Taylor, who has collected all the available data for the task. In the little known and the unexplored parts of the country the contours are only roughly approximate; in fact, Dr. Taylor describes all the contours as form lines. A note appended to the map gives the authority for the data used in each State. Some improvement might well be made in the lettering and printing, but the map, on the whole, is a useful production and a great improvement, from the orographical point of view, on pre-existing maps. It may be taken for the time being as the authoritative version of the relief of Australia.

AN interesting experiment on the registration of distant earthquakes is described by Messrs. T. A. Jaggar and A. Romberg in the Bulletin of the Seismological Society of America (vol. viii., 1918, pp. 88–89). An Omori horizontal pendulum was used, but the smoked paper and stylus were replaced by an optical system. The arm of the pendulum was continued by a magnetised steel needle. A second needle of the same size was fixed to the back of a light circular mirror, at right angles to the mirror, and with its north pole close to the south pole of the arm magnet. The mirror was cemented to a vertical taut silk fibre held on a post standing on a concrete table, and both pendulum and mirror were damped by projections immersed in oil. During a horizontal displacement of the ground the supports of the pendulum and mirror were moved, while the frictionless magnets rotated the mirror round a vertical axis. The seismogram reproduced (July 2, 1918), made on a Kodak film travelling at 32 mm. per minute, shows the first and second preliminary phases with extraordinary clearness.

IN connection with recent efforts to promote the cultivation of sugar in Bihar, Rai Bahadur Joges Chandra Ray publishes an interesting article in the Journal of the Bihar and Orissa Research Society (vol. iv., part iv.) on the sugar industry in ancient India. In the Vedas there is no mention of any saccharine substance other than honey. Cane was cultivated, but we do not know whether it was used for chewing or pressed, or whether its juice was dried for future use. The original seat of the cultivation of the Paunda, or thick cane, seems to have been northern Bengal. We do not know how the ancients clarified the cane-juice or refined their sugar. Probably the method was much the same as that which obtains now in Bengal and elsewhere, and clarification was secured by skimming off the scum which rises to the surface. It is remarkable that no account of palm-sugar is found in ancient Sanskrit works, and the industry in Bengal seems to be of comparatively recent date. There is a prejudice against its use as the tree yields an intoxicating beverage.

BULLETIN No. 3 of the Scientific and Industrial Research Department consists of a study of the performance of night glasses by Mr. L. C. Martin, of the Imperial College of Science, London. The work arose out of the exacting demands the war made on the optician for a telescope suitable for observing in a feeble light, and the object was to determine the best proportions and conditions of use of an instrument with a given size of objective. The author's conclusions may be summarised as follows:—The binocular form is most convenient. For hand binoculars for general purposes a magnification of 6 should not be exceeded. The exit pupil should be 0·7 or 0·8 cm. in diameter, and a large field of view is desirable, as it increases the ease of observation. For stand instruments a magnification of 10 is most suitable for general purposes. Where higher magnification is necessary it is of the utmost importance to protect the observer's eye and the field of view from all stray light. To diminish the number of glass air surfaces, a cemented prism erecting system should be used.

A PAPER contributed by S. L. Archbutt and D. Hanson at the recent meeting of the Institute of Metals describes in detail the methods found most suitable for the preparation of specimens of aluminium alloys for microscopic examination. Particular care must be given to the grinding and polishing operations, since the successful development of the microstructure depends to a very large extent on the condition of the prepared surface. Hand-grinding on graded emery papers which have been previously soaked in paraffin is found to give excellent results, while for the polishing operation a motor-driven disc covered with smooth-surfaced woollen cloth is employed. Magnesia is used as the polishing powder, but for soft alloys the final stages are carried out on a wet pad practically free from magnesia. With regard to the etching both of aluminium and its alloys, the authors recommend a 10 per cent. solution either of caustic soda or of hydrofluoric acid in water. Methods for the identification of the various impurities occurring in aluminium and of the different micrographic constituents found in the commoner aluminium alloys are also described. These have been investigated in great detail with the object of finding reagents which will distinguish between these different constituents when they occur in the same alloy. Alloys of aluminium with silicon, iron, copper, zinc, nickel, magnesium, and manganese are considered in this connection.

WE are very glad to see that M. L.-P. Clerc, who is so well known in this country, and took up military duties at the very beginning of the war, has resumed his activities in connection with the French Photographic Society. In a recent issue of the society's Bulletin M. Clerc publishes a paper (reproduced in the *British Journal of Photography* for

May 16) on the use of alcohol for the rapid drying of gelatine negatives and prints. He gives curves that show the drying action of alcohol under various conditions, but perhaps the most interesting result is the cause of the white deposit that so often appears when this method is used. It is due to bicarbonate of lime deposited because of its insolubility in alcohol. By immersing the negative in very weak hydrochloric acid (10 c.c. of commercial acid to a litre of water) immediately before putting it into the alcohol, the deposition is avoided. This weak acid will remove a deposit that has been allowed to form, and if the patch is of small area it may be made to disappear by breathing on it for a short time, because of the moisture and carbon dioxide in the expired air. Of course, the use of soft water obviates this annoyance, but the use of pure alcohol instead of "denatured" spirit does not, though this has often been prescribed as a remedy.

More than sixty years ago Pasteur showed that glycerol was formed during the alcoholic fermentation of sugar. The quantity found was about 3·6 per cent. of the sugar fermented. Later, Laborde showed that the quantity of glycerine produced varied according to the kind of yeast used and its amount, more than double the foregoing proportion being obtained in some cases. Even so, this is a very small yield if fermentation is regarded as a source of glycerol. It is understood, however, that during the late war our opponents supplemented their production by fermentation methods when fats, the ordinary source, ran short. In *Helvetica Chimica Acta* (vol. ii., No. 2) K. Schweizer indicates the method used. It is known that glyceric aldehyde and dihydroxyacetone can be converted into glycerol by means of reducing agents, and there is some evidence that one or both of these substances may be produced as intermediate compounds during fermentation. The working hypothesis, therefore, was that these compounds, in the nascent state, would be acted upon by a reducing agent and converted into glycerol to a greater extent than in ordinary fermentation. This was found to be the case. On adding sodium sulphite, and working with a neutral liquid, a yield of more than 21 per cent. of glycerol was obtained

Monomethylamine being a synthetic reagent of considerable importance, a new method for its preparation will probably be of interest to organic chemists. The reduction of chloropicrin yields different products according to the reducing agent employed. Raschig showed that when chloropicrin is reduced with stannous chloride and hydrochloric acid, cyanogen chloride is produced. If, however, iron-filings and acetic acid (Geisse) or tin and hydrochloric acid (Wallach) are used, monomethylamine is the major product. Prof. P. F. Frankland and Messrs. F. Challenger and N. A. Nicholls have studied the conditions of the reaction (Journal of the Chemical Society, February, p. 159) and recommend the following procedure:—Iron-filings (500 grams) are gradually shaken into water (2500 c.c.) containing hydrochloric acid (60 c.c.), and contained in a large earthenware jar which is fitted with a stirrer and placed in a little cold water. The chloropicrin (250 grams) is then gradually added, with very efficient stirring. The temperature rises, and should be maintained at about 50° C. The smell of chloropicrin disappears after three hours, and the mixture is then gradually added to a boiling solution of sodium hydroxide into which steam is blown. The methylamine is absorbed in hydrochloric acid, the solution evaporated, and the residue dried to constant weight. In this way a yield of 95·5 per cent. of the amine hydrochloride containing only 3·5 per cent. of ammonium chloride is obtained. When reduced with a hot alkaline solution of ferrous sulphate, chloropicrin gives a considerable amount of ammonia. The method described for the preparation of methylamine should prove valuable now that large quantities of chloropicrin are readily procurable.

A new weekly journal devoted to industrial and engineering chemistry, and entitled the *Chemical Age*, is announced for publication on June 21 by Messrs. Benn Bros., Ltd., Bouverie Street, E.C.4.

OUR ASTRONOMICAL COLUMN.

The Solar Eclipse.—The total eclipse of the sun that will happen to-day is remarkable for the small amount of attention that is being given to observations of the corona and the sun's surroundings that have formed the main object for which eclipse expeditions have been organised during the last half-century, but in place of these the opportunity is being used to make investigations in several modern branches of science. The Committee of the British Association for Radio-telegraphic Investigation has arranged a programme for sending and receiving signals to determine their strength during the eclipse. The Department of Terrestrial Magnetism of the Carnegie Institution of Washington has arranged observing parties at stations in America and West Africa, who, in co-operation with various observatories and individuals, will make special magnetic and allied observations inside and outside the shadow belt. As has already been announced, the British expeditions to Brazil and West Africa will photograph the field of stars around the sun for the purpose of detecting any displacement due either to gravitation according to the relativity theory published by Einstein in 1915, or to the effect of the sun's gravitation on the mass that light is believed to have according to the electromagnetic theory.

June Meteors.—Though twilight is strong in the midsummer month, meteors are fairly numerous, and probably more so than in April and May. Fireballs are often seen, and particularly from a radiant point in Scorpio. There is a possible cometary radiant on June 10 from 273×0, and three others during the last week of the month from 313×60, 13×6, and 213×53. The last appears to be probably connected with the comet of Pons-Winnecke, which afforded an unusually rich shower on June 28, 1916. Though no return of this display can be confidently expected until 1921 or 1922, it should be looked for every year, as it may form an annual exhibition, though really abundant at intervals of about every six years. The great shower of Perseids begins early in July, and there is strong evidence that the same system furnishes an occasional meteor at the end of June. Observers should therefore watch especially for such an object during the moonless nights at the end of June this year.

Paris Observatory Reports.—The reports of the French National Observatory have been made and presented to the council annually during the war, and those for the years 1916–18 have lately been received. The work has naturally been much curtailed owing to the absence of many of the staff on military service, and a projected modification of the programme with the principal meridian instrument has had to be held in abeyance. Also, it was considered prudent to take precautions against damage to this and other instruments, so that the reports show little in the way of observation, the energies of such observers as were available being devoted entirely to the requirements of the time service the errors of the clocks being